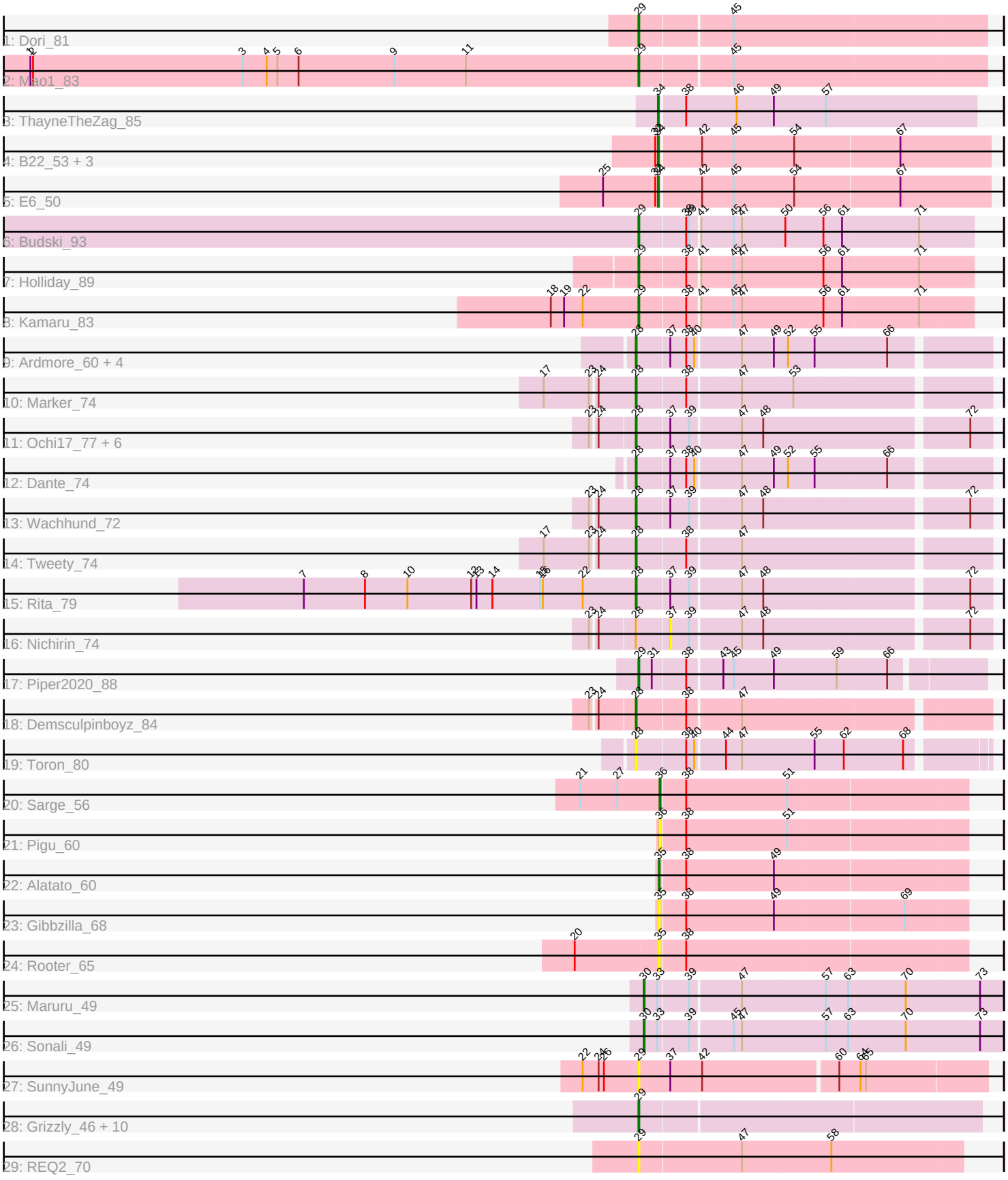
# Pham 292896


1: Dori_81
2: Mao1_83
3: ThayneTheZag_85
4: B22_53 + 3
5: E6_50
6: Budski_93
7: Holliday_89
8: Kamaru_83
9: Ardmore_60 + 4
10: Marker_74
11: Ochi17_77 + 6
12: Dante_74
13: Wachhund_72
14: Tweety_74
15: Rita_79
16: Nichirin_74
17: Piper2020_88
18: Demsculpinboyz_84
19: Toron_80
20: Sarge_56
21: Pigu_60
22: Alatato_60
23: Gibbzilla_68
24: Rooter_65
25: Maruru_49
26: Sonali_49
27: SunnyJune_49
28: Grizzly_46 + 10
29: REQ2_70

Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. If this default region is judged to be packed too tightly with annotated starts, the track will be further scaled to only show that region of the ORF with annotated starts. This action will be indicated by adding "Zoomed" to the title. For starts, yellow indicates the location of called starts comprised solely of Glimmer/GeneMark auto-annotations, green indicates the location of called starts with at least 1 manual gene annotation.

# Pham 292896 Report

This analysis was run 04/18/26 on database version 643.

Pham number 292896 has 52 members, 10 are drafts.

Phages represented in each track:
• Track 1 : Dori_81
• Track 2 : Mao1_83
• Track 3 : ThayneTheZag_85
• Track 4 : B22_53, Anatole_45, B3_47, E1_45
• Track 5 : E6_50
• Track 6 : Budski_93
• Track 7 : Holliday_89
• Track 8 : Kamaru_83
• Track 9 : Ardmore_60, Chuckly_71, Avani_81, Jant_75, ThetaBob_78
• Track 10 : Marker_74
• Track 11 : Ochi17_77, AlpineSix_78, Seabastian_79, Modragons_76, Jinglebell_78, OfUltron_79, Llama_78
• Track 12 : Dante_74
• Track 13 : Wachhund_72
• Track 14 : Tweety_74
• Track 15 : Rita_79
• Track 16 : Nichirin_74
• Track 17 : Piper2020_88
• Track 18 : Demsculpinboyz_84
• Track 19 : Toron_80
• Track 20 : Sarge_56
• Track 21 : Pigu_60
• Track 22 : Alatato_60
• Track 23 : Gibbzilla_68
• Track 24 : Rooter_65
• Track 25 : Maruru_49
• Track 26 : Sonali_49
• Track 27 : SunnyJune_49
• Track 28 : Grizzly_46, DNAIII_0044, Jolene_46, Rabbs_48, Rattrick_46, Sneeze_47, Liefie_45, Terror_45, Periodt_46, Barkley26_46, Taheera_45
• Track 29 : REQ2_70

***Summary of Final Annotations (See graph section above for start numbers):***

The start number called the most often in the published annotations is 28, it was called in 16 of the 42 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• AlpineSix_78, Ardmore_60, Avani_81, Chuckly_71, Dante_74, Demsculpinboyz_84, Jant_75, Jinglebell_78, Llama_78, Marker_74, Modragons_76, Ochi17_77, OfUltron_79, Rita_79, Seabastian_79, ThetaBob_78, Toron_80, Tweety_74, Wachhund_72,

Genes that have the "Most Annotated" start but do not call it:
• Nichirin_74,

Genes that do not have the "Most Annotated" start:
• Alatato_60, Anatole_45, B22_53, B3_47, Barkley26_46, Budski_93, DNAIII_0044, Dori_81, E1_45, E6_50, Gibbzilla_68, Grizzly_46, Holliday_89, Jolene_46, Kamaru_83, Liefie_45, Mao1_83, Maruru_49, Periodt_46, Pigu_60, Piper2020_88, REQ2_70, Rabbs_48, Rattrick_46, Rooter_65, Sarge_56, Sneeze_47, Sonali_49, SunnyJune_49, Taheera_45, Terror_45, ThayneTheZag_85,

**Summary by start number:**

Start 28:
• Found in 20 of 52 ( 38.5% ) of genes in pham
• Manual Annotations of this start: 16 of 42
• Called 95.0% of time when present
• Phage (with cluster) where this start called: AlpineSix_78 (F1), Ardmore_60 (F1), Avani_81 (F2), Chuckly_71 (F1), Dante_74 (F1), Demsculpinboyz_84 (F2), Jant_75 (F1), Jinglebell_78 (F1), Llama_78 (F1), Marker_74 (F1), Modragons_76 (F1), Ochi17_77 (F1), OfUltron_79 (F1), Rita_79 (F1), Seabastian_79 (F1), ThetaBob_78 (F4), Toron_80 (F6), Tweety_74 (F1), Wachhund_72 (F1),

Start 29:
• Found in 19 of 52 ( 36.5% ) of genes in pham
• Manual Annotations of this start: 16 of 42
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Barkley26_46 (G1), Budski_93 (DN), DNAIII_0044 (G1), Dori_81 (AD), Grizzly_46 (G1), Holliday_89 (DN1), Jolene_46 (G1), Kamaru_83 (DN1), Liefie_45 (G1), Mao1_83 (AD), Periodt_46 (G1), Piper2020_88 (F1), REQ2_70 (singleton), Rabbs_48 (G1), Rattrick_46 (G1), Sneeze_47 (G1), SunnyJune_49 (FL), Taheera_45 (G1), Terror_45 (G1),

Start 30:
• Found in 2 of 52 ( 3.8% ) of genes in pham
• Manual Annotations of this start: 2 of 42
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Maruru_49 (FG), Sonali_49 (FG),

Start 34:
• Found in 6 of 52 ( 11.5% ) of genes in pham
• Manual Annotations of this start: 6 of 42
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Anatole_45 (BV), B22_53 (BW), B3_47 (BV), E1_45 (BV), E6_50 (BW), ThayneTheZag_85 (AY),

Start 35:
• Found in 3 of 52 ( 5.8% ) of genes in pham
• Manual Annotations of this start: 1 of 42
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Alatato_60 (FB), Gibbzilla_68 (FB), Rooter_65 (FB),

Start 36:
• Found in 2 of 52 ( 3.8% ) of genes in pham
• Manual Annotations of this start: 1 of 42
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Pigu_60 (FB), Sarge_56 (FB),

Start 37:
• Found in 17 of 52 ( 32.7% ) of genes in pham
• No Manual Annotations of this start.
• Called 5.9% of time when present
• Phage (with cluster) where this start called: Nichirin_74 (F1),

**Summary by clusters:**

There are 15 clusters represented in this pham: DN, F1, singleton, F4, AD, G1, FB, F6, AY, BV, BW, DN1, FG, F2, FL,

Info for manual annotations of cluster AD:
•Start number 29 was manually annotated 2 times for cluster AD.

Info for manual annotations of cluster AY:
•Start number 34 was manually annotated 1 time for cluster AY.

Info for manual annotations of cluster BV:
•Start number 34 was manually annotated 3 times for cluster BV.

Info for manual annotations of cluster BW:
•Start number 34 was manually annotated 2 times for cluster BW.

Info for manual annotations of cluster DN:
•Start number 29 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster DN1:
•Start number 29 was manually annotated 2 times for cluster DN1.

Info for manual annotations of cluster F1:
•Start number 28 was manually annotated 13 times for cluster F1.
•Start number 29 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster F2:
•Start number 28 was manually annotated 2 times for cluster F2.

Info for manual annotations of cluster F4:
•Start number 28 was manually annotated 1 time for cluster F4.

Info for manual annotations of cluster FB:
•Start number 35 was manually annotated 1 time for cluster FB.
•Start number 36 was manually annotated 1 time for cluster FB.

Info for manual annotations of cluster FG:
•Start number 30 was manually annotated 2 times for cluster FG.

Info for manual annotations of cluster G1:
•Start number 29 was manually annotated 10 times for cluster G1.

### *Gene Information:*

Gene: Alatato_60 Start: 34727, Stop: 35062, Start Num: 35
Candidate Starts for Alatato_60:
(Start: 35 @34727 has 1 MA's), (38, 34754), (49, 34853),

Gene: AlpineSix_78 Start: 47298, Stop: 47669, Start Num: 28
Candidate Starts for AlpineSix_78:
(23, 47253), (24, 47259), (Start: 28 @47298 has 16 MA's), (37, 47334), (39, 47355), (47, 47409), (48, 47433), (72, 47646),

Gene: Anatole_45 Start: 30233, Stop: 30598, Start Num: 34
Candidate Starts for Anatole_45:
(32, 30230), (Start: 34 @30233 has 6 MA's), (42, 30278), (45, 30314), (54, 30380), (67, 30497),

Gene: Ardmore_60 Start: 41615, Stop: 41989, Start Num: 28
Candidate Starts for Ardmore_60:
(Start: 28 @41615 has 16 MA's), (37, 41651), (38, 41669), (40, 41678), (47, 41726), (49, 41762), (52, 41777), (55, 41807), (66, 41885),

Gene: Avani_81 Start: 44848, Stop: 45222, Start Num: 28
Candidate Starts for Avani_81:
(Start: 28 @44848 has 16 MA's), (37, 44884), (38, 44902), (40, 44911), (47, 44959), (49, 44995), (52, 45010), (55, 45040), (66, 45118),

Gene: B22_53 Start: 33661, Stop: 34026, Start Num: 34
Candidate Starts for B22_53:
(32, 33658), (Start: 34 @33661 has 6 MA's), (42, 33706), (45, 33742), (54, 33808), (67, 33925),

Gene: B3_47 Start: 30896, Stop: 31261, Start Num: 34
Candidate Starts for B3_47:
(32, 30893), (Start: 34 @30896 has 6 MA's), (42, 30941), (45, 30977), (54, 31043), (67, 31160),

Gene: Barkley26_46 Start: 35142, Stop: 35513, Start Num: 29
Candidate Starts for Barkley26_46:
(Start: 29 @35142 has 16 MA's),

Gene: Budski_93 Start: 50931, Stop: 51293, Start Num: 29
Candidate Starts for Budski_93:

(Start: 29 @50931 has 16 MA's), (38, 50982), (39, 50985), (41, 50994), (45, 51030), (47, 51039), (50, 51087), (56, 51129), (61, 51150), (71, 51234),

Gene: Chuckly_71 Start: 44186, Stop: 44560, Start Num: 28
Candidate Starts for Chuckly_71:
(Start: 28 @44186 has 16 MA's), (37, 44222), (38, 44240), (40, 44249), (47, 44297), (49, 44333), (52, 44348), (55, 44378), (66, 44456),

Gene: DNAIII_0044 Start: 33784, Stop: 34155, Start Num: 29
Candidate Starts for DNAIII_0044:
(Start: 29 @33784 has 16 MA's),

Gene: Dante_74 Start: 48875, Stop: 49249, Start Num: 28
Candidate Starts for Dante_74:
(Start: 28 @48875 has 16 MA's), (37, 48911), (38, 48929), (40, 48938), (47, 48986), (49, 49022), (52, 49037), (55, 49067), (66, 49145),

Gene: Demsculpinboyz_84 Start: 44357, Stop: 44731, Start Num: 28
Candidate Starts for Demsculpinboyz_84:
(23, 44312), (24, 44318), (Start: 28 @44357 has 16 MA's), (38, 44411), (47, 44468),

Gene: Dori_81 Start: 57732, Stop: 58109, Start Num: 29
Candidate Starts for Dori_81:
(Start: 29 @57732 has 16 MA's), (45, 57831),

Gene: E1_45 Start: 30233, Stop: 30598, Start Num: 34
Candidate Starts for E1_45:
(32, 30230), (Start: 34 @30233 has 6 MA's), (42, 30278), (45, 30314), (54, 30380), (67, 30497),

Gene: E6_50 Start: 33161, Stop: 33526, Start Num: 34
Candidate Starts for E6_50:
(25, 33101), (32, 33158), (Start: 34 @33161 has 6 MA's), (42, 33206), (45, 33242), (54, 33308), (67, 33425),

Gene: Gibbzilla_68 Start: 35366, Stop: 35701, Start Num: 35
Candidate Starts for Gibbzilla_68:
(Start: 35 @35366 has 1 MA's), (38, 35393), (49, 35492), (69, 35633),

Gene: Grizzly_46 Start: 35126, Stop: 35497, Start Num: 29
Candidate Starts for Grizzly_46:
(Start: 29 @35126 has 16 MA's),

Gene: Holliday_89 Start: 51444, Stop: 51806, Start Num: 29
Candidate Starts for Holliday_89:
(Start: 29 @51444 has 16 MA's), (38, 51495), (41, 51507), (45, 51543), (47, 51552), (56, 51642), (61, 51663), (71, 51747),

Gene: Jant_75 Start: 45698, Stop: 46072, Start Num: 28
Candidate Starts for Jant_75:
(Start: 28 @45698 has 16 MA's), (37, 45734), (38, 45752), (40, 45761), (47, 45809), (49, 45845), (52, 45860), (55, 45890), (66, 45968),

Gene: Jinglebell_78 Start: 47297, Stop: 47668, Start Num: 28

Candidate Starts for Jinglebell_78:
(23, 47252), (24, 47258), (Start: 28 @47297 has 16 MA's), (37, 47333), (39, 47354), (47, 47408), (48, 47432), (72, 47645),

Gene: Jolene_46 Start: 35150, Stop: 35521, Start Num: 29
Candidate Starts for Jolene_46:
(Start: 29 @35150 has 16 MA's),

Gene: Kamaru_83 Start: 47388, Stop: 47750, Start Num: 29
Candidate Starts for Kamaru_83:
(18, 47289), (19, 47304), (22, 47325), (Start: 29 @47388 has 16 MA's), (38, 47439), (41, 47451), (45, 47487), (47, 47496), (56, 47586), (61, 47607), (71, 47691),

Gene: Liefie_45 Start: 35148, Stop: 35519, Start Num: 29
Candidate Starts for Liefie_45:
(Start: 29 @35148 has 16 MA's),

Gene: Llama_78 Start: 47152, Stop: 47523, Start Num: 28
Candidate Starts for Llama_78:
(23, 47107), (24, 47113), (Start: 28 @47152 has 16 MA's), (37, 47188), (39, 47209), (47, 47263), (48, 47287), (72, 47500),

Gene: Mao1_83 Start: 56621, Stop: 56998, Start Num: 29
Candidate Starts for Mao1_83:
(1, 55934), (2, 55937), (3, 56174), (4, 56201), (5, 56213), (6, 56237), (9, 56345), (11, 56426), (Start: 29 @56621 has 16 MA's), (45, 56720),

Gene: Marker_74 Start: 45543, Stop: 45917, Start Num: 28
Candidate Starts for Marker_74:
(17, 45444), (23, 45495), (24, 45501), (Start: 28 @45543 has 16 MA's), (38, 45597), (47, 45654), (53, 45711),

Gene: Maruru_49 Start: 38776, Stop: 39165, Start Num: 30
Candidate Starts for Maruru_49:
(Start: 30 @38776 has 2 MA's), (33, 38791), (39, 38824), (47, 38878), (57, 38971), (63, 38995), (70, 39058), (73, 39139),

Gene: Modragons_76 Start: 47141, Stop: 47512, Start Num: 28
Candidate Starts for Modragons_76:
(23, 47096), (24, 47102), (Start: 28 @47141 has 16 MA's), (37, 47177), (39, 47198), (47, 47252), (48, 47276), (72, 47489),

Gene: Nichirin_74 Start: 46551, Stop: 46886, Start Num: 37
Candidate Starts for Nichirin_74:
(23, 46470), (24, 46476), (Start: 28 @46515 has 16 MA's), (37, 46551), (39, 46572), (47, 46626), (48, 46650), (72, 46863),

Gene: Ochi17_77 Start: 46748, Stop: 47119, Start Num: 28
Candidate Starts for Ochi17_77:
(23, 46703), (24, 46709), (Start: 28 @46748 has 16 MA's), (37, 46784), (39, 46805), (47, 46859), (48, 46883), (72, 47096),

Gene: OfUltron_79 Start: 47297, Stop: 47668, Start Num: 28

Candidate Starts for OfUltron_79:
(23, 47252), (24, 47258), (Start: 28 @47297 has 16 MA's), (37, 47333), (39, 47354), (47, 47408), (48, 47432), (72, 47645),

Gene: Periodt_46 Start: 35141, Stop: 35512, Start Num: 29
Candidate Starts for Periodt_46:
(Start: 29 @35141 has 16 MA's),

Gene: Pigu_60 Start: 32856, Stop: 33191, Start Num: 36
Candidate Starts for Pigu_60:
(Start: 36 @32856 has 1 MA's), (38, 32883), (51, 32997),

Gene: Piper2020_88 Start: 52279, Stop: 52644, Start Num: 29
Candidate Starts for Piper2020_88:
(Start: 29 @52279 has 16 MA's), (31, 52294), (38, 52330), (43, 52366), (45, 52378), (49, 52423), (59, 52492), (66, 52546),

Gene: REQ2_70 Start: 43365, Stop: 43724, Start Num: 29
Candidate Starts for REQ2_70:
(Start: 29 @43365 has 16 MA's), (47, 43479), (58, 43578),

Gene: Rabbs_48 Start: 35478, Stop: 35849, Start Num: 29
Candidate Starts for Rabbs_48:
(Start: 29 @35478 has 16 MA's),

Gene: Rattrick_46 Start: 35141, Stop: 35512, Start Num: 29
Candidate Starts for Rattrick_46:
(Start: 29 @35141 has 16 MA's),

Gene: Rita_79 Start: 48269, Stop: 48640, Start Num: 28
Candidate Starts for Rita_79:
(7, 47894), (8, 47963), (10, 48011), (12, 48083), (13, 48089), (14, 48107), (15, 48161), (16, 48164), (22, 48209), (Start: 28 @48269 has 16 MA's), (37, 48305), (39, 48326), (47, 48380), (48, 48404), (72, 48617),

Gene: Rooter_65 Start: 34611, Stop: 34946, Start Num: 35
Candidate Starts for Rooter_65:
(20, 34518), (Start: 35 @34611 has 1 MA's), (38, 34638),

Gene: Sarge_56 Start: 32052, Stop: 32387, Start Num: 36
Candidate Starts for Sarge_56:
(21, 31962), (27, 32004), (Start: 36 @32052 has 1 MA's), (38, 32079), (51, 32193),

Gene: Seabastian_79 Start: 47298, Stop: 47669, Start Num: 28
Candidate Starts for Seabastian_79:
(23, 47253), (24, 47259), (Start: 28 @47298 has 16 MA's), (37, 47334), (39, 47355), (47, 47409), (48, 47433), (72, 47646),

Gene: Sneeze_47 Start: 35477, Stop: 35848, Start Num: 29
Candidate Starts for Sneeze_47:
(Start: 29 @35477 has 16 MA's),

Gene: Sonali_49 Start: 39233, Stop: 39622, Start Num: 30

Candidate Starts for Sonali_49:
(Start: 30 @39233 has 2 MA's), (33, 39248), (39, 39281), (45, 39326), (47, 39335), (57, 39428), (63, 39452), (70, 39515), (73, 39596),

Gene: SunnyJune_49 Start: 34283, Stop: 34666, Start Num: 29
Candidate Starts for SunnyJune_49:
(22, 34220), (24, 34238), (26, 34244), (Start: 29 @34283 has 16 MA's), (37, 34319), (42, 34355), (60, 34502), (64, 34526), (65, 34532),

Gene: Taheera_45 Start: 34853, Stop: 35224, Start Num: 29
Candidate Starts for Taheera_45:
(Start: 29 @34853 has 16 MA's),

Gene: Terror_45 Start: 34853, Stop: 35224, Start Num: 29
Candidate Starts for Terror_45:
(Start: 29 @34853 has 16 MA's),

Gene: ThayneTheZag_85 Start: 46273, Stop: 46623, Start Num: 34
Candidate Starts for ThayneTheZag_85:
(Start: 34 @46273 has 6 MA's), (38, 46300), (46, 46357), (49, 46399), (57, 46456),

Gene: ThetaBob_78 Start: 46922, Stop: 47296, Start Num: 28
Candidate Starts for ThetaBob_78:
(Start: 28 @46922 has 16 MA's), (37, 46958), (38, 46976), (40, 46985), (47, 47033), (49, 47069), (52, 47084), (55, 47114), (66, 47192),

Gene: Toron_80 Start: 48999, Stop: 49367, Start Num: 28
Candidate Starts for Toron_80:
(Start: 28 @48999 has 16 MA's), (38, 49053), (40, 49062), (44, 49092), (47, 49110), (55, 49191), (62, 49224), (68, 49287),

Gene: Tweety_74 Start: 47222, Stop: 47596, Start Num: 28
Candidate Starts for Tweety_74:
(17, 47123), (23, 47174), (24, 47180), (Start: 28 @47222 has 16 MA's), (38, 47276), (47, 47333),

Gene: Wachhund_72 Start: 44350, Stop: 44721, Start Num: 28
Candidate Starts for Wachhund_72:
(23, 44302), (24, 44308), (Start: 28 @44350 has 16 MA's), (37, 44386), (39, 44407), (47, 44461), (48, 44485), (72, 44698),